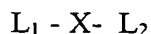


What is claimed is:

1. A method of attaching a biological molecule having at least one reactive amino, thiol or hydroxyl group to a solid support having at least one available amino group, the method comprising the steps of:

(a) reacting the available amino group on the solid support with an activating compound, the activating compound having the structure:

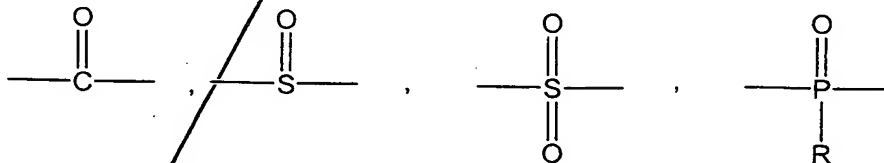


wherein L_1 and L_2 are leaving groups, and X is a moiety capable of nucleophilic substitution so that the reaction results in L_1 being displaced by the available amino group on the solid support to form an activated support; and

(b) reacting the biological molecule with the activated support, thereby displacing L_2 and attaching the biological molecule to the solid support.

2. The method of claim 1 wherein L_1 and L_2 are independently selected from the group consisting of halogen, imidazole, triazole, pyrrole, pyrazole, thiazole, tetrazole and O-Aryl-R, and wherein R is selected from the group consisting of halogen, nitro, cyano, and alkoxy moiety.

3. The method of claim 2 wherein X is selected from the group consisting of:



wherein R is selected from the group consisting of alkyl, aryl, and OR^1 having no greater than about 18 carbon atoms, and

wherein R^1 is selected from the group consisting of alkyl and aryl having no greater than about 18 carbon atoms.

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4. The method of claim 1 wherein the activating compound is 1,2,4-carbonyl di-
triazole.

5. The method of claim 1 wherein step (b) comprises depositing between about 5
to about 25 nanoliters of the biological molecule in the circular spot having a diameter
of between about 10 microns to about 500 microns at one or more sites on the
activated support.

6. The method of claim 5 wherein the step of depositing comprises printing onto
the activated solid support.

7. The method of claim 5 wherein in step b, the reaction occurs in a humid
chamber.

8. The method of claim 6 wherein in step b, the reaction occurs in a humid
chamber.

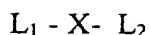
9. The method of claim 1 wherein step (a) occurs in an organic solution.

10. The method of claim 9 wherein step (a) occurs in the presence of a tertiary
organic base.

11. The method of claim 10 wherein step (b) occurs in an aqueous solution.

12. A method of attaching a biological molecule having at least one reactive
amino, thiol or hydroxyl group to a solid support having at least one available amino
group, the method comprising the steps of:

- (a) reacting the available amino group on the solid support with an
activating compound, the activating compound having the structure:

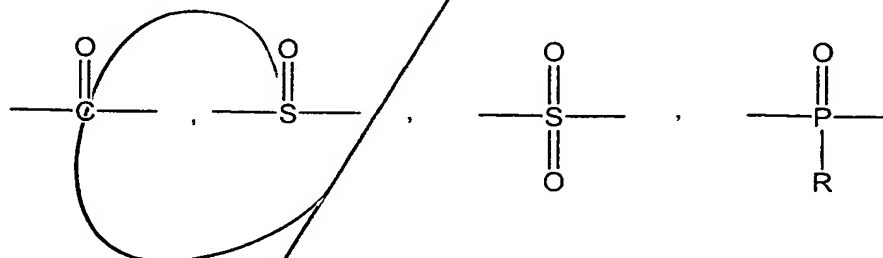


wherein L_1 and L_2 are identical leaving groups, and X is capable of nucleophilic substitution so that the reaction results in L_1 being displaced by the

(b) reacting the biological molecule with the activated support, thereby displacing L_2 and attaching the biological molecule to the solid support.

13. The method of claim 12 wherein L_1 and L_2 are selected from the group consisting of halogen, imidazole, triazole, pyrrole, pyrazole, thiazole, tetrazole and O-Aryl-R, and wherein R is selected from the group consisting of halogen, nitro, cyano, and alkoxy moiety.

14. The method of claim 13 wherein X is selected from the group consisting of:

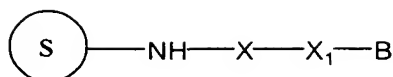


wherein R is selected from the group consisting of alkyl, aryl, and OR^1 having no greater than about 18 carbon atoms, and

wherein R^1 is selected from the group consisting of alkyl and aryl having no greater than about 18 carbon atoms.

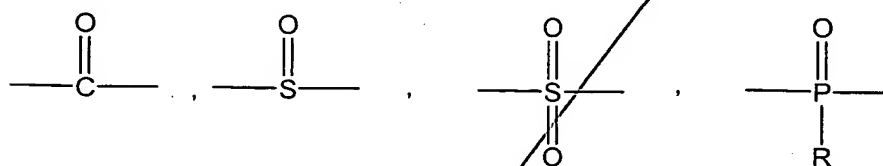
SL6
B55 15. The method of claim 12 wherein the activating compound is 1,2,4-carbonyl di triazole.

16. A solid-support attached to a biological molecule having the formula:



wherein S is the solid support,

wherein X is selected from the group consisting of:



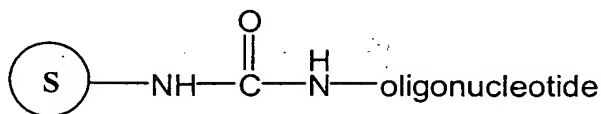
wherein R is selected from the group consisting of alkyl, aryl, and OR^1 having no greater than about 18 carbon atoms,

wherein R^1 is selected from the group consisting of alkyl and aryl having no greater than about 18 carbon atoms,

wherein X_1 is selected from the group consisting of NH, oxygen, and sulfur, and

wherein B is the biological molecule.

17. A solid-support of claim 16 having the formula:



18. The method of claim 1 comprising the step of washing from the solid support non-bound compounds after step (a) and before step (b).

19. A method of attaching an organic molecule to a solid support, the method comprising the steps of:

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- (a) activating the solid support; and
- (b) reacting the organic molecule with the activated support in a humid chamber, having a humidity of at least 60 percent relative humidity.

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